

REMARKS

This paper is in response to the official action of June 9, 2005. Reconsideration is requested.

By the foregoing, claim 1 has been amended to incorporate the limitations of claim 2, and claims 4-8 and 10 have been canceled.

No new matter has been added.

Claims 1, 3, and 9 remain in the application, and are at issue.

The anticipation rejection of claims 1 and 9 based on Meguro et al., and the obviousness rejection of claim 3 based on Meguro et al. in view of Nepela et al. are respectfully but strongly traversed. Reconsideration is requested.

It was the prior art knowledge that the DLC protective coating formed on the surface of a magnetoresistive head should have a thickness over 70 Å in order to prevent the head from abrasion (please refer to paragraph [0008] at page 4 of the specification of the patent application). However, such a thick protective coating increases internal stress, leading to peeling of the protective film. To prevent this, an intermediate layer such as Si is required, which makes the process complicated and costly (please refer to paragraph [009] at page 4 of the patent application).

On the other hand, the present inventor has found that a protective coating of DLC having a thickness of 10-30 Å has a good adhesion to the magnetoresistive head and thus exhibits excellent durability without need of an intermediate layer, thereby making the process efficient and cost-saving.

Meguro et al. U.S. Patent No. 5,638,847 describes on lines 24-28 of column 9 that a protective film of DLC is formed on the tip surface of a magnetic head in a thickness of several nanometers (several ten Å) to protect the tip portion from moisture and corrosive gases. According to dictionaries in hand, “several” means “more than a few and usually 5 to 6” (Readers Plus, by Kenkyusha), “more than a few but less than many and generally 4, 5 and

6" (English Japanese/Japanese English Medium Size Dictionary, by Kenkyusha), "between a few and many and usually more than 3 and usually 5 to 6" (Random House English Japanese Dictionary, by Shogakukan). Thus, the words "several nanometers" do not seem to contain 10-30 Å; this range is certainly not explicitly disclosed in the Meguro et al. reference.

Moreover, there is no concrete description in Meguro et al. on the protective coating formed by DLC and it may have referred to a DLC coating using intermediate layer or thicker DLC coating. In any event, there is no description suggesting either the thickness or the results from the thinner DLC film of the invention.

The DLC coating disclosed in U.S. Patent No. 6,330,131 (Nepela et al.) has a thickness of about 500-3000 Å (column line 49-53) which is much larger than that of the present invention.

In contrast, the present invention utilizes only 10-30 Å for the DLC thickness and yet achieved superior results as seen in Examples 1-4 in Table 1 at page 15 of the specification.

For the foregoing reasons, it is urged that claims 1, 3, and 9 patentably define over the applied art, and an indication to that effect is solicited.

Should the examiner wish to discuss the foregoing or any matter of form in an effort to advance this application towards allowance, he is urged to telephone the undersigned at the indicated number.

Respectfully submitted,

MARSHALL, GERSTEIN & BORUN LLP

By: 

James P. Zeller
Reg. No. 28,491
Attorneys for Applicants

September 9, 2005

6300 Sears Tower
233 South Wacker Drive
Chicago, Illinois 60606-6357
(312) 474-6300